UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/466,178	12/17/1999	ANDREW PETER BRADLEY	169.1523	9858

5514	7590	06/03/2004	

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EXAMINER
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ART UNIT	PAPER NUMBER
2623	

DATE MAILED: 06/03/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>03 May 2004</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-5,7 and 10-24</u> is/are pending in the application.

     4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1,2,5,7,10,11,14-16,19-21 and 24</u> is/are rejected.

7)☒ Claim(s) <u>1-5,7,12,13,17,18,22 and 23</u> is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a)☐ All   b)☐ Some * c)☐ None of:

       1.☐ Certified copies of the priority documents have been received.

       2.☐ Certified copies of the priority documents have been received in Application No. _____.

       3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

     * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>16</u>.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1.   A request for continued examination under 37 CFR 1.114, including the fee set forth in

37 CFR 1.17(e), was filed in this application after final rejection. Since this application is

eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e)

has been timely paid, the finality of the previous Office action has been withdrawn pursuant to

37 CFR 1.114. Applicant's submission filed on 5/3/04 has been entered.

Response to Amendment

2.   The amendment received on 5/3/04 has been entered. Claims 1-5, 7, and 10-24 remain

pending.

Specification

3.   The disclosure is objected to because of the following informalities: "ie." should be

changed to "i.e." on page 1, line 22; "each kernel as" should be changed to "each kernel has" on

page 2, line 5; "eg." should be changed to "e.g." on page 3, line 27; and "artefacts" should be

changed to "artifacts" on page 9, line 8 and page 13, line 27.

Appropriate correction is required.

Claim Objections

4.   Claims 1-5 and 7 are objected to because of the following informalities: "cleansing

process" should be changed to "cleaning process" in claim 1, line 10.

Claims 2-5 and 7 depend on claim 1, and are thereby objected to.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

5.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6.   Claims 1, 2, 5-7, 10, 11, 14-16, 19-21, and 24 are rejected under 35 U.S.C. 103(a) as

being unpatentable over Van Nostrand (5,008,752) in view of Tai (5,054,100).

Regarding claims 1, 10, 15, and 20, Van Nostrand discloses a method of interpolating a

first set of discrete sample values to generate a second set of discrete sample values using one of

a plurality of interpolation kernels (Abstract), wherein the interpolation kernel 16 is selected 15

depending on the type of image content including a local contrast indicator being used to indicate

text regions represented by the first set of discrete sample values in order to optimize the

selection of the interpolation kernel (Col. 5, lines 41-57). Van Nostrand discloses employing

more interpolation kernels providing different degrees of edge enhancement (Col. 15, lines 3-

20). Van Nostrand further discloses wherein the selection of the interpolation kernel is performed using a kernel selection map processed in accordance with a cleaning process such that the kernel selected for a particular discrete sample value of the first set is dependent on the kernel selected for a further discrete sample value adjacent to the particular discrete sample value (Col. 15, lines 3-20). While Van Nostrand indicates the use of edge direction (Col. 13, lines 10-18) and edge strength (Col. 15, lines 3-20) in the selection of the interpolation kernel, Van Nostrand does not explicitly disclose including an edge strength indicator and an edge direction indicator. However, Tai teaches that it is known to modify factors of interpolation of an image depending on an edge strength indicator and an edge direction indicator (Abstract; Col. 5, lines 56-58; Col. 6, lines 4-11). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the selection of interpolation kernels disclosed by Van Nostrand to include selecting the interpolation kernels depending on an edge strength indicator and an edge direction indicator as taught by Tai because edge detection techniques are well known and routinely utilized in the art and it provides selective edge enhancement in the interpolation images (Van Nostrand, Col. 15, lines 9-14) thereby preserving the sharpness of high contrast edges and reducing the need for enhancement processing before or after the interpolation processing.

Regarding claims 2, 11, 16, and 21, Van Nostrand discloses the plurality of interpolation kernels are each derived from a universal interpolation kernel (Col. 5, lines 2-39).

Regarding claims 5, 14, 19, and 24, Van Nostrand discloses the first set of discrete sample values are at a different resolution than the second set of discrete sample values (Abstract).

Regarding claim 7, Van Nostrand and Tai do not appear to recognize including a

morphological process. However, using a morphological operation is known in the image

processing prior art, as indicated in the applicant's disclosure (Page 9, lines 16-18). Therefore, it

would have been obvious to one of ordinary skill in the art at the time of the invention to have

modified the indicators disclosed by Van Nostrand and Tai to include a morphological operation

in order to emphasize edge-enhanced image of the boundaries of the objects in the image.

Allowable Subject Matter

7.   Claims 3, 4, 12, 13, 17, 18, 22, and 23 are objected to as being dependent upon a rejected

base claim, but would be allowable if rewritten in independent form including all of the

limitations of the base claim and any intervening claims.

Response to Arguments

8.   Applicant's arguments filed 5/3/04 have been fully considered but they are not

persuasive.

Summary of Applicant's Arguments: Van Nostrand does not specify using an edge

strength indicator and an edge direction indicator. Van Nostrand does not teach or suggest

selecting an interpolation kernel using a kernel selection map processed in accordance with a

cleaning process such that the kernel selected for a particular discrete sample value of the first set

is dependent on the kernel selected for a further discrete sample value adjacent to the particular

discrete sample value. Tai does not overcome the deficiencies of Van Nostrand. Nothing has

been found in Tai that would teach or suggest selecting interpolation kernels from a plurality of interpolation kernels.

Examiner's Response: Van Nostrand does not specify using an edge strength indicator and an edge direction indicator. However, Van Nostrand does suggest employing a plurality of interpolation kernels providing different degrees of edge enhancement (Col. 15, lines 3-20). Tai teaches that it is known to modify interpolation of an image depending on an edge strength indicator and an edge direction indicator (Abstract; Col. 5, lines 56-58; Col. 6, lines 4-11). The combined teachings of Van Nostrand and Tai meet the claimed language. Furthermore, Tai is not relied upon for selecting interpolation kernels from a plurality of interpolation kernels. Van Nostrand further discloses wherein the selection of the interpolation kernel is performed using a kernel selection map processed in accordance with a cleaning process such that the kernel selected for a particular discrete sample value of the first set is dependent on the kernel selected for a further discrete sample value adjacent to the particular discrete sample value (Col. 15, lines 3-20).
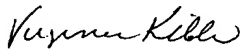
Contact Information

9.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Virginia M Kibler whose telephone number is (703) 306-4072. The examiner can normally be reached on Mon-Thurs 8:00 - 5:30 and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amelia Au can be reached on (703) 308-6604. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Virginia Kibler
05/28/04

MEHRDAD DASTOURI
PRIMARY EXAMINER